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PRACTICE

10-MINUTE CONSULTATION

Birth options after a caesarean section

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What you need to know

- Either vaginal birth or elective repeat caesarean section are reasonable options, and adverse outcomes are rare in most uncomplicated pregnancies in women with a previous caesarean section
- Around 50% of women with one previous caesarean section attempt a vaginal birth in their second pregnancy, and of these nearly two thirds are successful
- Explore the woman's concerns, preferences, reasons for previous caesarean section, and plans for future pregnancies to inform the choice of mode of delivery

A 30 year old woman at 36 weeks' gestation in her second pregnancy asks about her options for delivery. Her previous baby was born by emergency caesarean section at 39 weeks, after breech presentation was diagnosed in labour.

Birth options after an earlier caesarean section include

- A trial of labour after caesarean: allowing spontaneous labour to occur, anticipating a vaginal delivery (known as vaginal birth after caesarean section, or VBAC)
- Planned elective repeat caesarean section (ERCS).

Both are reasonable options for most women. The rates of serious maternal and neonatal adverse outcomes with either of the strategies are low.¹ Pregnancy complications might alter the risks and benefits of each delivery strategy. ERCS is recommended in some scenarios (Boxed Text on page 1 box 1), but an exploration of the woman's wishes and shared decision making is vital. Women attribute different values to the benefits and risks of either approach. Studies from the UK and US show that around 50% of women attempted a vaginal birth after one previous caesarean section.⁴⁻⁶

Box 1 Indications for elective caesarean section^{2,3}

Fetal complications

- Breech presentation at term; offer elective caesarean section if external cephalic version is unsuitable or unsuccessful
- Other non-vertex presentations, including transverse lie
- Twin pregnancy if the first twin is breech

Maternal complications

- Placenta praevia (covering or less than 2 cm from the internal orifice)
- Maternal viral infections:
 - Primary genital herpes simplex virus infection occurring in the third trimester
 - HIV: if the woman is on any antiretroviral therapy and the viral load is 400 copies per ml or more, OR if the woman is not on antiretroviral therapy
- Obstruction to pelvic outflow such as a pelvic fibroid, or a bony pelvic deformity
- Maternal conditions rendering labour unsafe, such as substantial dilation of the aortic root (eg, >4 cm with Marfan's syndrome)
- Women with uterine scars other than those associated with lower segment caesarean section, such as women with a myomectomy or classic caesarean section scar

Initiate a formal discussion to make a final plan for delivery late in the third trimester.

What you should cover

Explore the woman's circumstances, concerns, preferences, and plans for future pregnancies.² Useful questions include

- How has your current pregnancy been so far? Have there been any problems?
- Have you had any illnesses or operations in the past? What was the reason for your first section?

The reasons for the first caesarean and/or the woman's medical history might prompt you to have a conversation with her about ERCS and why it might be indicated (Boxed Text on page 1box 1).

- What was your first birth experience like, in terms of labour and the delivery? What was the recovery like? Was your baby OK?

This is useful to ascertain her preferences and address any concerns.

- What are your plans for future pregnancies?

This could influence choice of mode of delivery in this pregnancy. A systematic review (21 studies, 2 282 922 deliveries) showed that serious morbidity in future pregnancies (including hysterectomy, blood transfusions, adhesions, and surgical injury) increases as the number of previous caesarean deliveries increases.⁷ Adverse outcomes that will accrue in a future pregnancy, potentially consequent to ERCS in this pregnancy, are irrelevant for women who do not plan to have more children. By contrast, VBAC might have advantages for women who intend further pregnancies.

- Do you have any thoughts already about what you would prefer? Is there anything about either birth option that you are concerned about? What advice are your friends and family giving you?

Some women have a clear preference for ERCS; others would like to attempt a vaginal birth. Although the decision should be the woman's; her partner, family, and friends might have an influence and it is often helpful to explore this explicitly.

What you should do

Facilitate an informed choice

Provide information on the likelihood of a successful vaginal birth and the risks and benefits of either approach. Explain any reasons why ERCS might be recommended because of fetal or maternal conditions (Boxed Text on page 1box 1).

VBAC success

In a recent large UK series (143 970 women in their second pregnancy, with previous caesarean section), 52% of women attempted a VBAC, and 63% of these women had a successful vaginal delivery.⁴ The remaining third of women who attempted VBAC underwent an emergency caesarean section. Women who were young, white, and socioeconomically advantaged were more likely to have a vaginal delivery, as were those whose first caesarean section was elective. A systematic review shows that even with two previous caesarean sections, VBAC success rates remain high (4064/5666, 71.1%) and maternal morbidity is similar to that with ERCS.⁸ At least two validated prediction models for VBAC success are available,^{9,10} one of which is available as an online tool. Their predictive capability is moderate at best and these are not yet in common use.

Inform women opting for VBAC that, if circumstances change, their care givers might advise caesarean section, either before or during labour—for example, if signs of fetal hypoxaemia develop, or if labour does not progress normally.

Benefits and risks of ERCS compared with VBAC

ERCS is associated with longer hospital stay, and complications such as hysterectomy for haemorrhage, cardiac arrest, and admission of the baby to the neonatal intensive care unit.² Conversely, women having a vaginal delivery are more likely to have perineal and abdominal pain during birth and for up to

three days post partum, injury to the vagina, haemorrhage, and obstetric shock.² ERCS is likely to have fewer complications and recovery is likely to be faster than the woman's original emergency caesarean section. A second labour is also likely to be faster than the first.¹¹

There are no randomised controlled trials comparing the two approaches.¹² In an Australian study, 2345 women with one previous caesarean section were assigned by patient preference to either VBAC or ERCS. The risk of fetal and infant death or serious infant outcome was lower with ERCS, and fewer women had major haemorrhage.¹³ A systematic review of observational studies examined maternal and neonatal outcomes after VBAC (200 studies, more than 400 000 women).¹ Maternal mortality was lower following VBAC compared with ERCS (↓).

Importantly, the absolute risk of adverse outcomes in both groups was very low. Hence the woman's preferences for a particular birth experience are likely to dominate decision making.

The impact of these birth options on longer term outcomes is less well studied. Systematic reviews suggest that babies born by caesarean section might have higher rates of food allergy (odds ratio 1.32, 95% confidence interval 1.22 to 1.55),¹⁴ hospitalisation for asthma (odds ratio 1.21, 95% confidence interval 1.12 to 1.31),¹⁴ and childhood obesity (relative risk 1.34, 95% confidence interval 1.18 to 1.51).¹⁵

Plan timing of delivery

ERCS is safest for the baby if scheduled after 39 weeks' gestation,¹ and the National Institute for Health and Care Excellence recommends that planned caesarean section should not be performed before this because of the increased incidence of adverse neonatal outcomes.²

Women opting for VBAC will normally not be offered any intervention to accelerate delivery until after 41 weeks. If labour has not started by 41 weeks, or if there are indications (or maternal request) for induction of labour before 39 weeks, women should be advised that there is a recognised risk of uterine rupture with a previous caesarean section. A UK population database study in more than 45 000 women with one previous caesarean section, reports that induction of labour after 39 weeks was associated with reduced rates of caesarean section (adjusted odds ratio 0.81 (95% confidence interval 0.71 to 0.91)) but higher rates of neonatal unit admission compared with expectant management.¹⁶ Arrange a consultation with a senior clinician (usually an obstetrician) for women desiring induction of labour in this scenario.¹⁷

Education into practice

How do your own preconceptions and preferences about mode of delivery influence discussions about birth options after caesarean section?

How can you minimise this and ensure you fully explore and support the woman's preferences?

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Table

Table 1 | Outcomes after ERCS or VBAC in women with previous caesarean section

	Incidence per 1000 (95% confidence interval)		Relative risk (95% confidence interval)
	ERCS	VBAC	
Maternal outcomes			
Maternal mortality (term delivery) ¹	0.096 (0.021 to 0.432)	0.019 (0.004 to 0.095)	
Serious maternal morbidity ¹³	0.31	0.45	0.46 (0.08 to 1.05)
Uterine rupture (any gestation) ¹	0.26 (0.09 to 0.82)	4.7 (2.8 to 7.7)	
Fetal and neonatal outcomes			
Neonatal mortality (term delivery) ¹	0.6 (0.2 to 1.5)	1.1 (0.6 to 2.0)	
Serious neonatal morbidity, including birth trauma (subdural or intracerebral haemorrhage, spinal cord injury, basal skull fracture, other fracture, peripheral nerve injury present at discharge from hospital) ¹³	9	23	0.41 (0.2 to 0.83)